

## HVAC SPECIFICATIONS

## REQUIREMENTS

All mechanical work shall be free from defects in workmanship and materials for a period of one (1) year from date of final acceptance and shall meet all local and state codes. All defects which develop or are discovered within this period shall be repaired by the Contractor to the satisfaction of the Engineer at no additional cost.

## GENERAL

- The Contractor shall examine the site of the proposed work to determine the existing conditions that may affect his work.
- It is the intention of the Contract Drawings and Specifications to call for finished work, tested and ready for operation. All materials shall be new and of first-quality.
- All material, work, incidental accessories or other details not shown but necessary to make the work complete and perfect and, in all respects, ready for operation, even if not particularly specified, shall be provided by the Contractor at no additional cost.
- The Contract Drawings are generally diagrammatic and are intended to convey the scope of work and indicate general arrangement of ductwork and pouches, and induction units. Existing ducts, pipes, utilities, etc. that are damaged during the construction period, whether or not due to the Contractor's negligence, shall be repaired or replaced by the Contractor and left in a condition satisfactory to the Engineer.
- The space around pipes, penetrating rated walls, shall not exceed 1/2" and shall be packed solid with thermalfiber or equivalent. Perimeter shall be closed off by tight fitting metal escutcheons on both sides of this construction as required by Section G26-504.5 of the New York City Building Code.

## WATER COOLED AIR CONDITIONING UNIT

- Furnish and install a packaged air conditioning unit. Unit shall be complete with temperature control, filters, compressor, evaporator coil, condenser water regulating valve and other system components required to provide proper air conditioning for the space designated on the Contract Drawings. Filter shall be Class 1, UL listed; 45% efficiency.
  - Air conditioning units shall be furnished with the following accessories:  
a) Condensate Pump  
b) Disconnect Switch  
c) Wall mounted Control Box w/ THERMOSTAT  
d) LIQUID - STAT  
Schedule
- | Unit No. | CFM | Blower Motor H.P. | Total Cooling Capacity BTU's | Auxiliary Cooling Water (GPM) 85°F F.W.T. | Model No. | Total Weight (Net) |
|----------|-----|-------------------|------------------------------|---|-----------|--------------------|
| AC-1     | 700 | 1/4               | 19,500                       | 3.7                                       | mm20W     | 225 lbs.           |
- Air conditioning unit motor shall be 1-phase and 277 volts.
- The unit shall be factory run, tested and rated in accordance with ARI Standards.
  - The air conditioning unit shall be complete with water regulator valve. Valve shall be rated for 150 psi working pressure.
  - Unit shall be similar or equal to Liebert Corporation and rated at 150 lbs.

## PIPING AND ACCESSORIES

## A. Piping Test Requirements (Auxiliary Cooling Water)

Operating Pressure	150 psig
Operating Temperature	80°F - 100°F
Hydrostatic Test Pressure	1.5 x Operating Pressure
Duration of Test	Two (2) Hours

Isolate equipment, controls, instruments and valves from the piping system during hydrostatic tests.

## B. Piping and Fittings

System	Pipe	Fittings
Auxiliary Cooling Water	Black Steel Pipe, Conforming to ASTM A-53 Schedule 40, Grade B Black Seamless	2 1/2" cast iron screwed 250 lbs. class
A.C. Unit Condensate Drain	Copper ASTM A-88 Hard Temper Type (L)	Wrought Copper Solder Joint 5 ANSI B16.18

Vent auxiliary cooling water piping at all high points.

## C. Accessories

- Unions for auxiliary cooling water service shall be similar and equal to 250 lbs. class, malleable iron with bronze seats, Grinnell Fig. 554, U.L. listed.
- Nipples 6" length of less shall be extra heavy and the material shall be the same as the pipe.
- Braided type flexible connector shall be Vibration Mounting and Control Inc. (VICO) Model MFP, Style NE, maximum 280 psig or approved equal.

## D. Soldered Joints

95-5 Tin antimony solder having a melting point greater than 450°F. Excess solder shall be removed while still in a molten state with a fillet left at the face of the fitting.

## E. Strainers

Strainers shall be similar and equal to those manufactured by Mueller Steam Specialty Co. Screened "M" strainers for pipes 2 1/2" and smaller shall be 250 lbs. No. 11. The screens for the strainers shall be stainless steel. Strainers shall be provided with capped blowdown valves.

## F. Sleeves and Escutcheons

Exposed piping passing through walls shall be fitted with chromium plated cast brass escutcheons with fastening set screws similar and equal to Fes & Mason Manufacturing Co., F & S Manufacturing Co., or Rixter Pattern and Casting Co.

## G. Pipe Supports and Hangers

- All supports and parts shall conform to the latest requirements of the ANSI Code for pressure piping, B31.10, and MSS Standard Practice SP-58.
- Hangers shall be manufactured by Grinnell Co., Central Iron, Fes & Mason, Blawnox Co., or approved equal.
- Pipe hangers, rods, inserts and clamps shall be those approved for their respective uses by the Underwriters' Laboratories, Inc.
- Unless otherwise specifically approved, hanger size and spacing shall be:

Pipe Sizes	Maximum Hanger Spacing	Minimum Rod Sizes
1/2" to 1"	9 ft. o.c.	3/8"
1 1/2" to 2 1/2"	9 ft. o.c.	1/2"
2 1/2" to 4"	10 ft. o.c.	1/2"

## H. Valves

Type	Size	Pressure	Jenkins Fig. No.	Crane Fig. No.	Stockham Fig. No.
Gate	Up to 2"	125 psi	47U	428-UB	B-105
Gate	Up to 2"	150 psi	49U	431	B-128
Gate	Up to 2"	300 psi	280U	634E	B-144

- Balancing valves shall be non-lubricating eccentric plug (ball centric) type with adjustable stop. Valve shall be rated for 175 lbs. w.o.g. or 400 lbs. w.o.g. Valves shall be as manufactured by Homestead Industries or approved equal.

## I. Pipe and Valve Identification

- Provide and affix a set of approved adhesive bands identifying the system and direction of flow.
- Each set shall consist of one band on which the name of the service is printed in letters not less than 1 inch high.
- Bands shall be in colors as indicated below and shall conform to ANSI Standard A-13.1

System	Background	Letters and Arrow
Auxiliary Cooled Water	Green	Black

Adhesive bands shall be W.H. Brady Co., Seton Corp. or an approved equal.

## J. Threaded Joints

Steel pipe threaded joints shall be made tight using only an approved pipe joint compound or tape, placed on the male thread only.

## INSULATION FOR CONDENSATE WATER (DRAIN)

Insulation: 1/2" thick one-piece fiberglass, flame spread rating not greater than "25", smoke rating "50". (insulate valves and fittings).

## CUTTING AND PATCHING

- Piping passing through walls shall have a trim opening cut no greater than necessary for the installation of a sleeve secured therein. Sleeve shall be 1/2" in diameter larger than the outside diameter of the pipe or required insulation passing through and of sufficient length to be flush with the finished wall surfaces.
- Piping passing through concrete floors shall have the opening core drilled 1/2" in diameter larger than the outside diameter of the pipe passing through.
- Annular spaces between piping and sleeves or core drilled floor openings shall be packed with thermalfiber and sealed to retain the fire integrity of the walls and floors with a non-hardening compound similar and equal to Uniseal or Duxseal as manufactured by Johns-Manville Co.

## EXECUTION

- All work in occupied tenant areas shall be performed on other than normal working hours as directed by the Engineer.
- The Contractor shall notify the Engineer when shut-down of existing systems becomes necessary. Shut-down time shall be kept to a minimum.

## SUBMITTALS

Submit for approval three (3) sets of Shop Drawings of piping. Submit three (3) sets of catalog cuts for air conditioning unit.

## APPLICABLE STANDARDS, CODES AND PUBLICATIONS

This entire installation shall be manufactured, tested and installed to conform, as a minimum, to provisions of the following Codes and standards except where stricter requirements are specified elsewhere herein or shown on the Contract Drawings.

- National and New York Electrical Code
- National Fire Protection Association (NFPA)
- New York City Building Code
- Underwriters' Laboratories, Inc. (U.L.)
- American National Standards Institute, Inc. (ANSI)

CONTRACT WIC 577.897

TCA/TAA NO. 2702

DATE APPROVED 11.28.83

CAMERON GENERAL CORPORATION

ONE WORLD TRADE CENTER 18th FLOOR  
NEW YORK, N.Y. 10048

MECHANICAL SPECIFICATIONS

JOHN C. WESTRICK &amp; ASSOCIATES

CONSULTING ENGINEERS  
3148 PARK AVENUE  
SOUTH PLAINFIELD, N.J. 07080SCALE: NONE DWN BY: V.V.  
DATE: 11-16-83 CHK BY: J.C.W.

M-2